How to Fix Bricked Flight Controller

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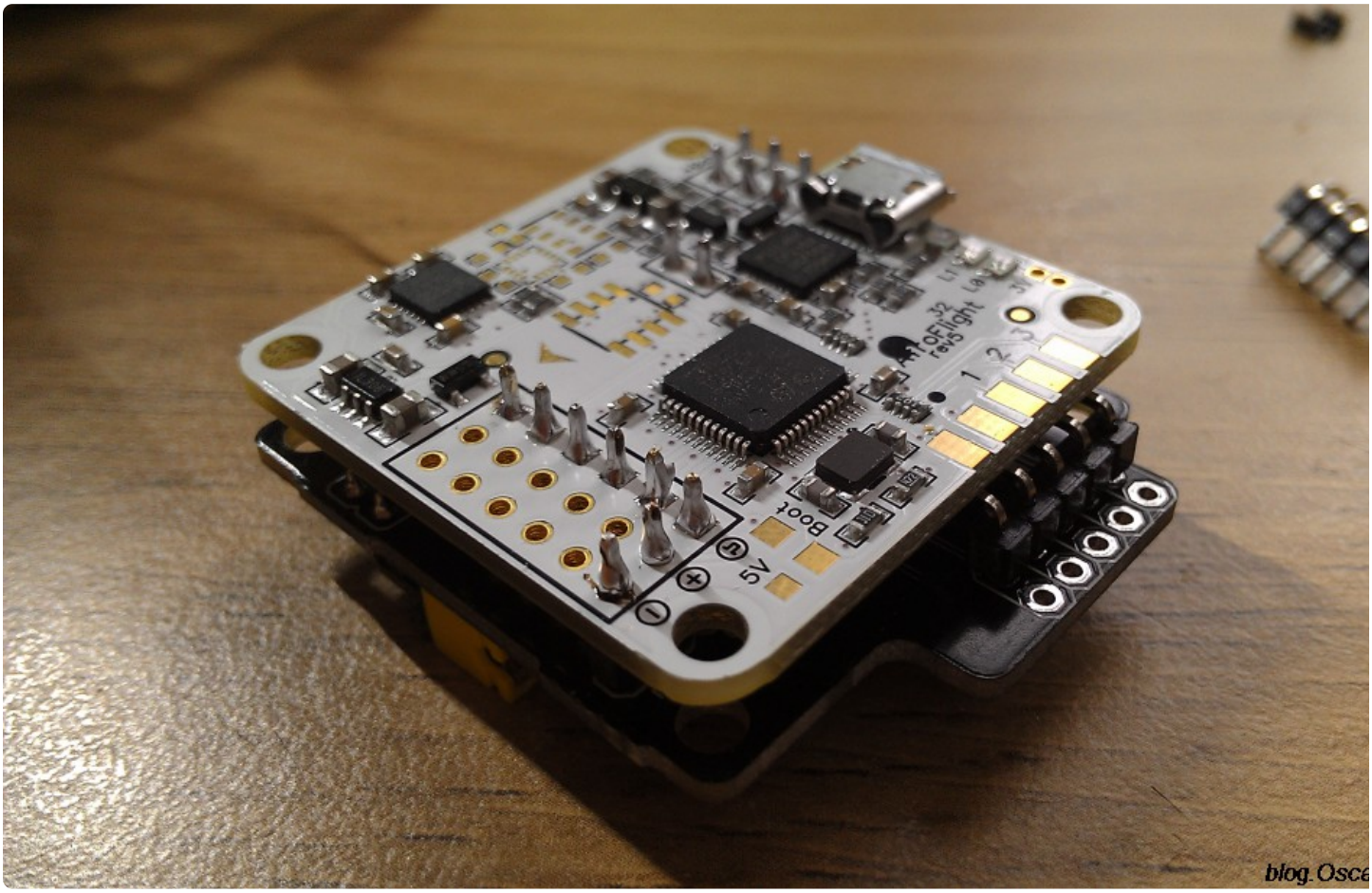

It's possible that you can brick your flight controllers due to human error (where FC doesn't talk to computer anymore, just timeout or says connection fail). You might still be able to fly using that FC as but there is no way you can connect the board to Cleanflight or Betaflight configurator.

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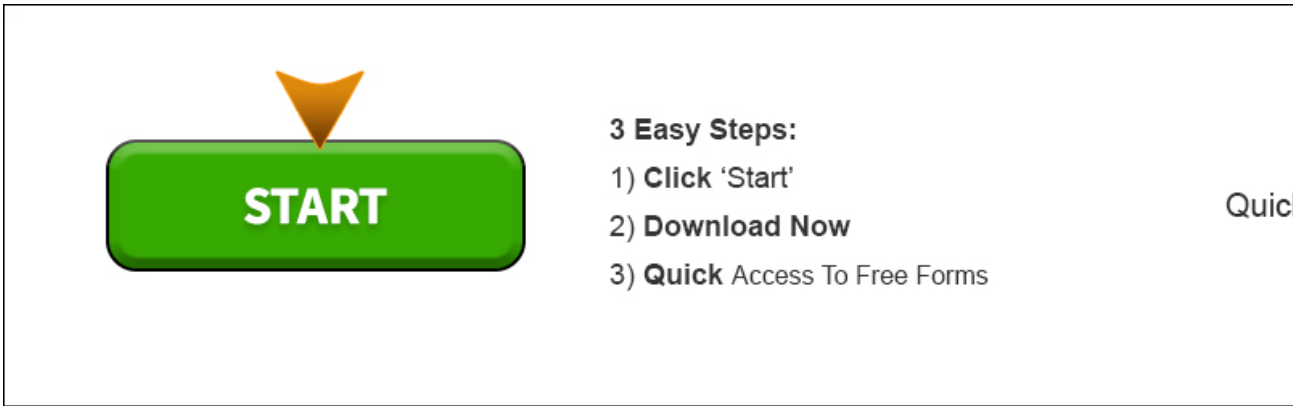


Reasons for Bricked FC

Actually the word "brick" is a wrong choice, you can't technically brick a flight controller. The issues we are more like "locking ourselves out".

95% of the causes are:

- Flashed wrong firmware target to the flight controller, e.g. flash CC3D firmware to a Naze32 boar
- On some boards where USB port is shared with UART1, and if you disabled MSP Data on UART won't be able to connect to the computer using USB again; Most modern FC has resolved this iss separating USB and UART's by using "USB VCP – virtual com port"

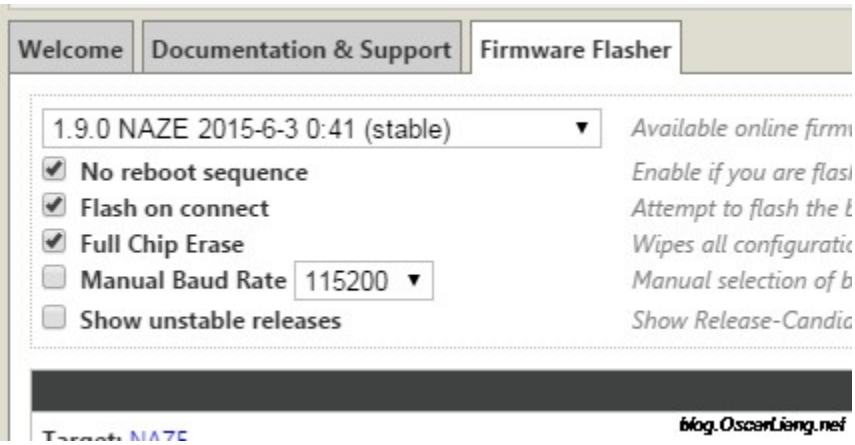
How to Recover Locked Flight Controllers

Solution is simple, short the bootloader pins and re-flash firmware. If it was a Data port settings that ca the flight controller to stop talking to Betaflight/Cleanflight, you will have to erase all settings on the boa

Some boards might have a "boot" button, some have solder pads, it depends. For example, here are tl bootloader pins on the Naze32 you need to short before flashing firmware.

And here are the settings in Betaflight or Cleanflight Firmware Flasher. Here are the steps:

- Load the correct firmware online
- Select “Flash on Connect”, if you have trouble with flashing: your FC board will be flashed automa when you connect it to your computer
- Select “Full Chip Erase” to erase – it will restore the MSP setting for UART1



After the flash you should be able to connect it to the configurator again.

If you have trouble flashing firmware, play around with the settings, maybe the baud rate is wrong (sor boards need 256000), maybe it's a driver issue.

If this method doesn't work for you, check with the seller or manufacturer for support. That's what you paying them for after all :) Happy flying.

Cannot flash FC?

If you are having problem flashing firmware on your flight controller, it could be a driver issue. Here is h fix FC driver issues.

Edit History

- Aug 2015 – Article created
- May 2017 – Generalized for all FC's

CLEANFLIGHT NAZE32

s post r

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website. Note that all comments are held for moderation before appearing.

SUBMIT

16 COMMENTS

FRANKY NATHANAEL

6th May 2020 - 6:13 pm

Hi Oscar Liang,

I just bought iFlight DC2 with DJI Air Unit recently,

I connect with my RX FrSky XM Plus with 3 wire (Signal White, V-in Red and GND Black) v
FC as in the manual.

When I run betaflight configurator, in the RECEIVER tab, there are no signal from my trans
tried a lot of option like UART and all settings seems to be good and same as instructed bu
can not connect, I am very sure that my TX and RX works normally because previously wo
normal on my other Quad with SBUS connection.

So I decide to flash the firmware on my iFlight TITAN DC2 as in the betaflight written =
STM32F405 with the newest one version 4.1.6, the default version is 4.1.2,but unfortunatel
flashing the firmware there is no status light on the FC board and when I connected to beta
still can connect but there is no accelerometer and ports only detected one.

Any comment would be much appreciated to my email franky.nathanael@gmail.com

JAKRU

19th February 2020 - 3:10 pm

I tried to flash sp f3 fc using betaflight to 4.0.6 fw.
The original fw was 3.0.6
When i connect the fc for the 1st time, the led will be solid blue, without pinching the boot p
But the flash failed On verify the firmware session.
So i tried to pinch the pins, and got solid blue, then tried again.
Flash failed again on verify session.
Tried several times with the same result.
And then i installed cleaflight. And have no problem to connect. And then i realized, the firm
version has been changed to the 4.0.6. Checked using CLI, it stated 4.0.6
And i tried to check with betaflight, and it stated 4.0.6
The question is, did i success updating my FC ? Or this FC is installed with broken firmwar
Since i never got the flashes done completely. The flashes always failed on verify session.
Please help me out
Thanks
Update :
I tried to flash using cleanflight, with the same result, failed when verify, but the fw version u
Going back to betaflight to flashing, the result still the same. And i tried to look around to se
feature, and it seems there are a lot of new feature showed up in betaflight. I dont know if t
the configurator feature, or this is the new feature that came along with the new firmware.

SERGIO NAYAR

11th June 2019 - 4:54 am

After all is done, I still can’t connect, no activity light even when I power it up with a battery connected normally. I only see one steady light, no flashes

(SOLVED)

I tried this several times on both PC and MAC. I was about to toss my hands up when all of sudden it worked.

I had tried this several times before but this is what I did:

Naze32 Rev6 (Afroflight .32)

CLFL_v2.4.0 – NAZE – 07-08-2018 08:24 (stable)

No reboot sequence

Flash on connect

Full chip erase

Manual baud rate – 115200

I held my tweezers down on the boot pads while I plugged the usb cable in. I looked over a cleanflight and saw progress. I took my tweezers off and after the flash finished I restarted flight and reloaded the same firmware with every option disabled.

I kept reflashing the software with the flash-on-connect option enabled and I noticed that or SOME software would result in a blinking GREEN light. Only when I saw that light could I c Something still seems off with this board but at least I can use it again.

CRISTIAN GUTIERREZ

26th August 2018 - 7:41 pm

Dear Oscar and friendas

I have the flight controller matek f722 … I assigned by softserial the pad pwm for smart por telemetry. Then in ports I gave him save and reboot and after that the controller card is not recognized by the pc. I have reinstalled the drivers multiple times without success. In the d manager, it appears as an unknown serial device and the controller card turns on, initially t a red LED, then blinks the blue and red LED and ends up with the red led on permanently recognizing the controller PC. What do I have to do to restore the controller or for the PC to recognize it? Many thanks. Best regards

Sprf3 connects, saves changes, allows for the Blheli passthrough, etc yet I have no activity whatsoever

BEN

27th June 2017 - 9:45 pm

Another option if you're having problems with the COM port is to flash the firmware using a LINK USB adapter. If your controller has a connector called SWM, that's an option. It'll hav – 3v 3, ground, SWMIO, and SWCLK.
You also don't have to touch the boot pads, which is handy when they aren't easily accessi With the ST-LINK software, you just need to feed it the .hex file for your particular board.

BIGT

7th April 2017 - 4:37 pm

So I have been trying this for 4 hours and no joy. Just ordered another board, life is just too

OSCAR

14th April 2017 - 5:51 pm

i agree! :) I normally just get new stuff when they stop working.

ED

11th February 2017 - 8:12 pm

Thank You!

GEORGE

21st January 2017 - 10:02 pm

can’t find one hope you can help thanks george

ANKIT ANAND

26th March 2016 - 10:22 am

reflashed the right firmware.. but still not able to connect.. any help?

YANN

4th January 2016 - 6:01 pm

hi , i have the same issue with the change of MSP port … but now when i try to flash . my b
not detected by my computer and there is no com port for it.
need help :(

XAVI

29th August 2015 - 10:46 am

but, what is the procedure? it has to connect the USB naze with pins attached boot?

SMUDJ2@YAHOO.COM

26th September 2015 - 12:24 am

Hi Oscar
I had to do this today. There is a special order to make it work.
Firstly, disconnect the USB from your PC but leave connected to the Naze32. Ther
the bootloader pins.
Whilst keeping the pins shorted, plug the USB into the PC.
Still with the bootloader pins shorted, in Cleanflight,
Check the box for no reboot sequence and full chip erase.

II had to do this after trying for hours following the incorrect instructions of just sho bootloader pins on startup.

MATT HAUER

12th February 2017 - 10:10 pm

I did the same on a Naze32 board (Eachine) and it flashed successfully af about 50 tries. In the one “lucky” try, it was when I pulled the USB cable fr physical port to another. It didn’t work (wouldn’t connect) anyway, and I tri another hour.

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